Algebra 2 Curriculum

$6 + 2x = 12$

7 UNITS
19 WEEKS

JOY 2 TEACH

SPECIAL EDUCATION

For students who:

- lack pre-requisite skills
- take alternate assessments
- are in special education
- short-attention span
- benefit from the use of pictures for support
- middle/high school

Why you need this bundle:

- If you teach multiple grade levels, you have all you need in one place.
- Having the same layout for each unit reduces students' anxiety and allows them to focus on the content.
- Aligned with extended learning standards.
- Saves you money
- Picture/visual support for struggling learners

This bundle includes 7 different units that introduce skills for solving algebraic equations. It includes:

1. Advanced Linear Functions (4 weeks)
2. Pythagorean Theorem (3 weeks)
3. Quadratic Equation(2 weeks)
4. Systems of Equations and Inequalities (4 weeks)
5. Solving Inequalities (4 weeks)
6. Solving Systems of Equations (3 weeks)
7. Solving Systems of Inequalities (3 weeks)

All units have printable AND digital versions

J2T

Table of Contents

Also included with this unit is a power point show that is narrated and has automatic advancement of slides. Let me know in the feedback if this was helpful ☺

Every unit has many scaffolded activities that include picture and color support.

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Quick Look

Day	Activity	Day	Activity	Day	Activity
1	• Book 1 • Vocab cards activity • Worksheet practice	8	• Book 1 • Vocab cards activity • Worksheet practice	15	• Book 3 • Vocab cards activity • Worksheet practice
2	• Book 1 • Vocab cards activity • Worksheet practice	9	• Book 1 • Vocab cards activity • Worksheet practice	16	• Book 3 • Vocab cards activity • Worksheet practice
3	• Book 1 • Vocab cards activity • Worksheet practice	10	• Book 1 • Vocab cards activity • Worksheet practice	17	• Book 3 • Vocab cards activity • Worksheet practice
4	• Book 1 • Vocab cards activity • Worksheet practice	11	• Book 2 • Vocab cards activity • Worksheet practice	18	• Book 3 • Vocab cards activity • Worksheet practice
5	• Book 1 • Vocab cards activity • Worksheet practice	12	• Book 2 • Vocab cards activity • Worksheet practice	19	
6	• Book 1 • Vocab cards activity • Worksheet practice	13	• Book 2 • Vocab cards activity • Worksheet practice	20	• Book 1,2 or 3 • Vocabulary cut and paste
7	• Book 1 • Vocab cards activity • Worksheet practice	14	• Book 2 • Vocab cards activity • Worksheet practice	21	• Book 1,2 or 3 • Vocabulary cut and paste
				22	• Assessment • Vocab sudoku

Lesson plans

Day 2

Activity	Notes	Materials
Read or listen to a recording of the book: More on Functions (15 minutes)	• Read through the story, asking lots of questions • Continue to make connections between book and vocabulary board	• Book #1: More on Functions • Vocabulary board

Vocabulary cards I Spy Game (10 minutes)
 	
**You can also use the cards from the Introductory Functions Unit
	• I play this game see description on day 2
	• Today, try to give clues about the card your student needs to find
	  ○ Read definition
	  ○ Show real photo that relates to card from book
	  ○ Describe the picture
	• Discuss relevant points on the card
	• You can also play this game in this manner having them find the symbol on their vocabulary board
		• Vocabulary cards (student set and teacher set)
		• Vocabulary board

Worksheet Review (5 minutes)	• Review one or both of the worksheets completed yesterday	• Worksheets completed yesterday
Worksheet	• Do one of the worksheets from the set: Matching Functions to graphs Choose the best version depending on the learning level of your students (cut and paste or draw a line to match) • Add color coding if needed • Students complete the worksheet • Make connections to the book as necessary	• Worksheet • Scissors • Glue
Worksheet practice #2 (10 minutes)	• Do one of the worksheets from the set: Viable Ordered Pairs • Add color coding if needed • Students complete the worksheet • Make connections to the book as necessary	• Worksheet • Scissors • Glue
Sharing (10 minutes)	• Each student shares one of their finished worksheets with the group using the communication method of their choice	• Completed worksheets

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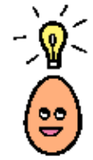
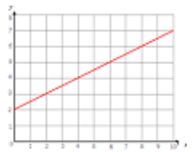
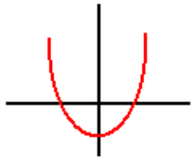
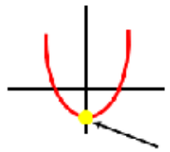
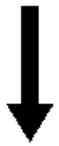
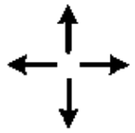
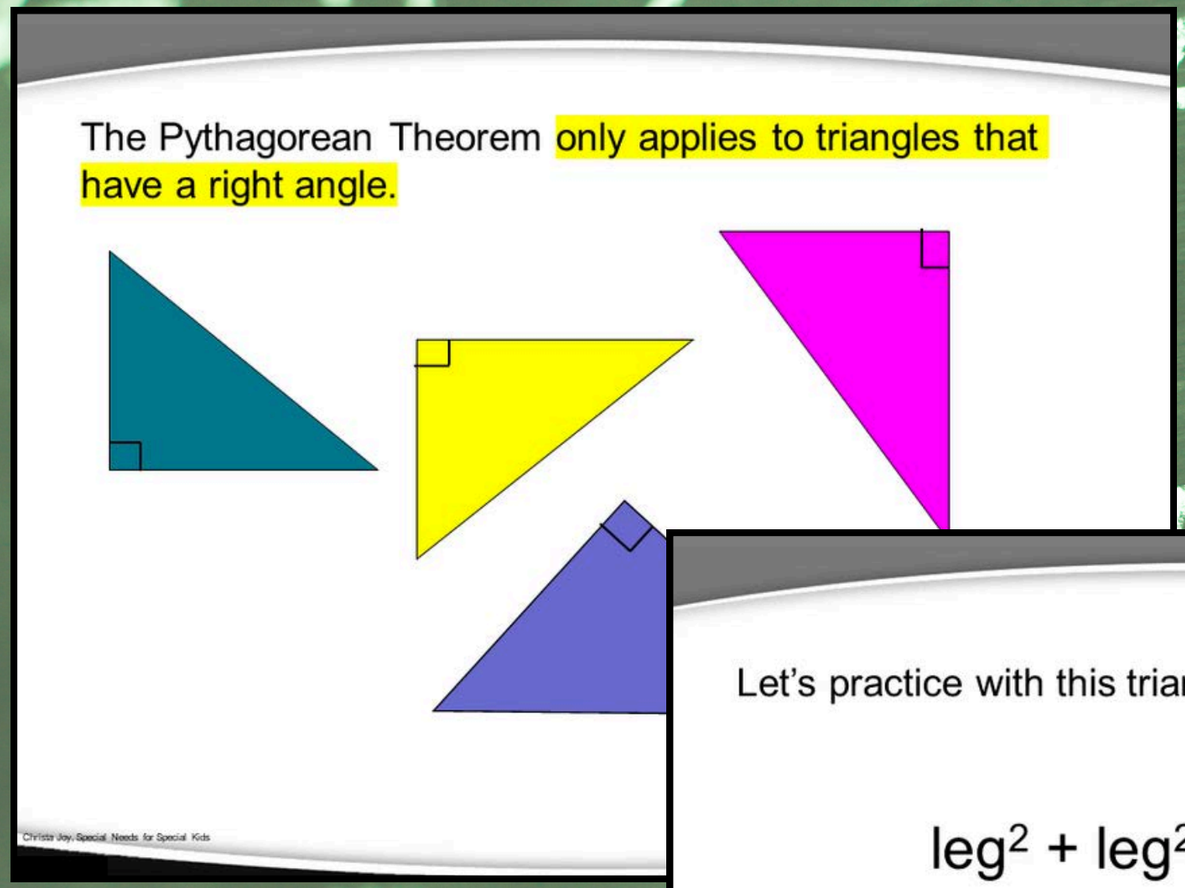
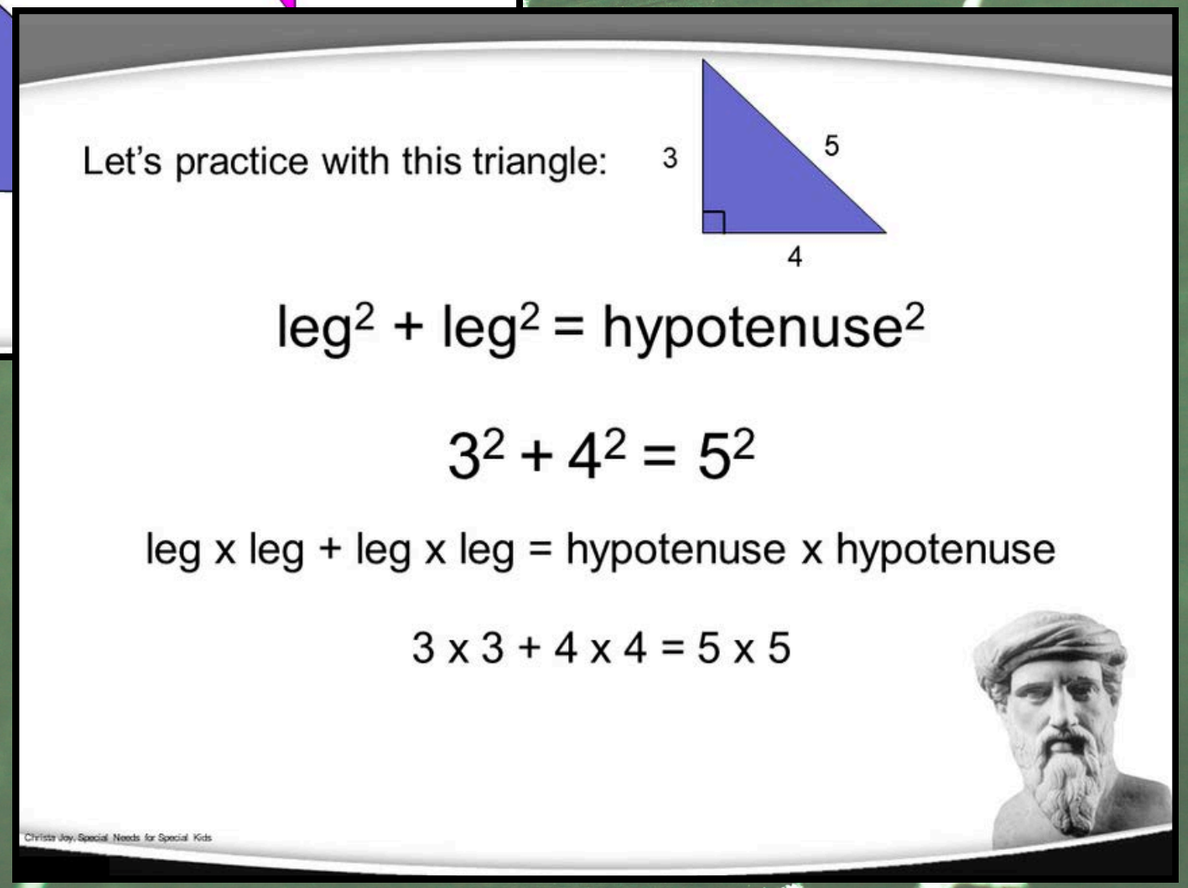
$ax^2+bx+c=0$ quadratic equation	 known	 unknown	a known	b known
c known	x unknown	 graph	 parabola	 vertex
 high	 low	 calculate	 speed	 direction
 repeat that	 yes	 no	 I don't know	 I need a break

Every unit uses the same vocabulary board while working through the unit. Suggestions for use are included.

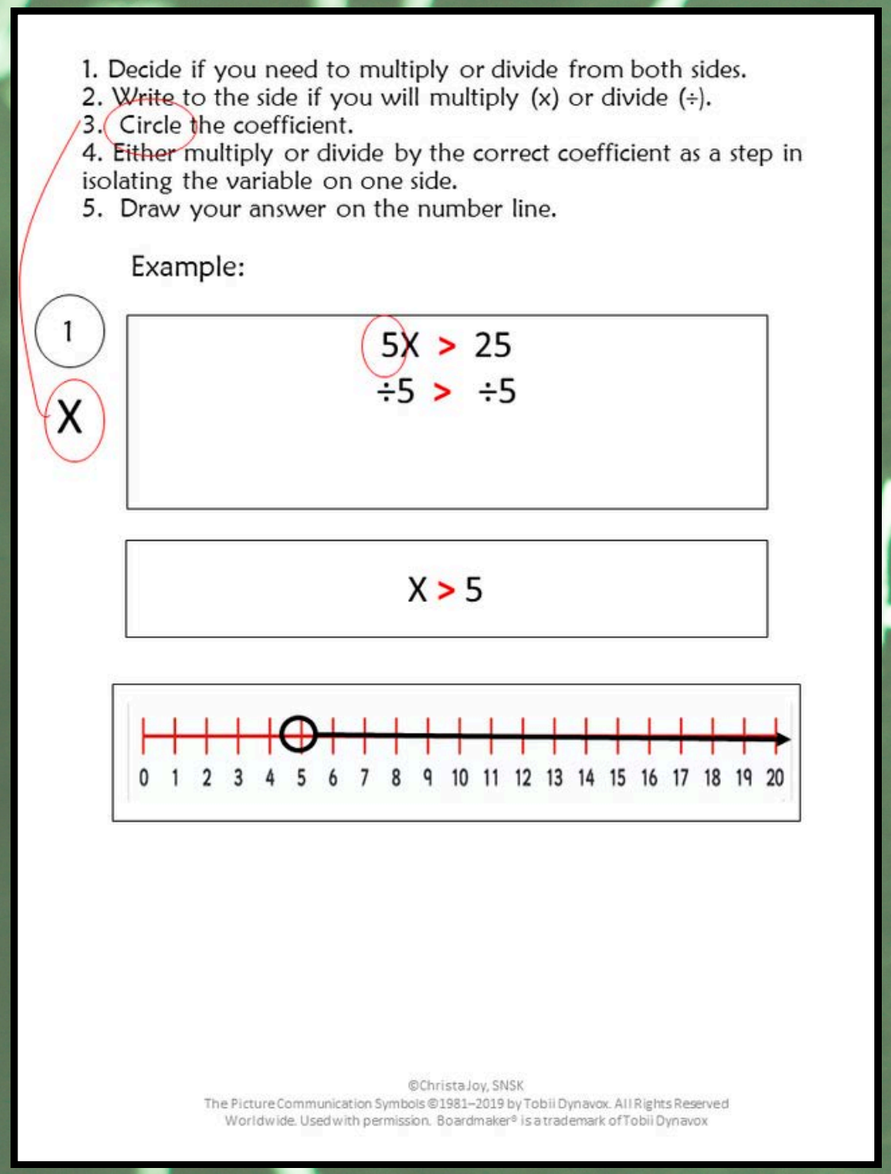


Books

Every unit has a book with simple text and engaging photos. It is available as a PDF and an MP4 (movie) file.



Solving Inequalities


1. Decide if you need to multiply or divide from both sides.
2. Write to the side if you will multiply (x) or divide (÷).
3. Circle the coefficient.
4. Either multiply or divide by the correct coefficient as a step in isolating the variable on one side.
5. Draw your answer on the number line.

Example:

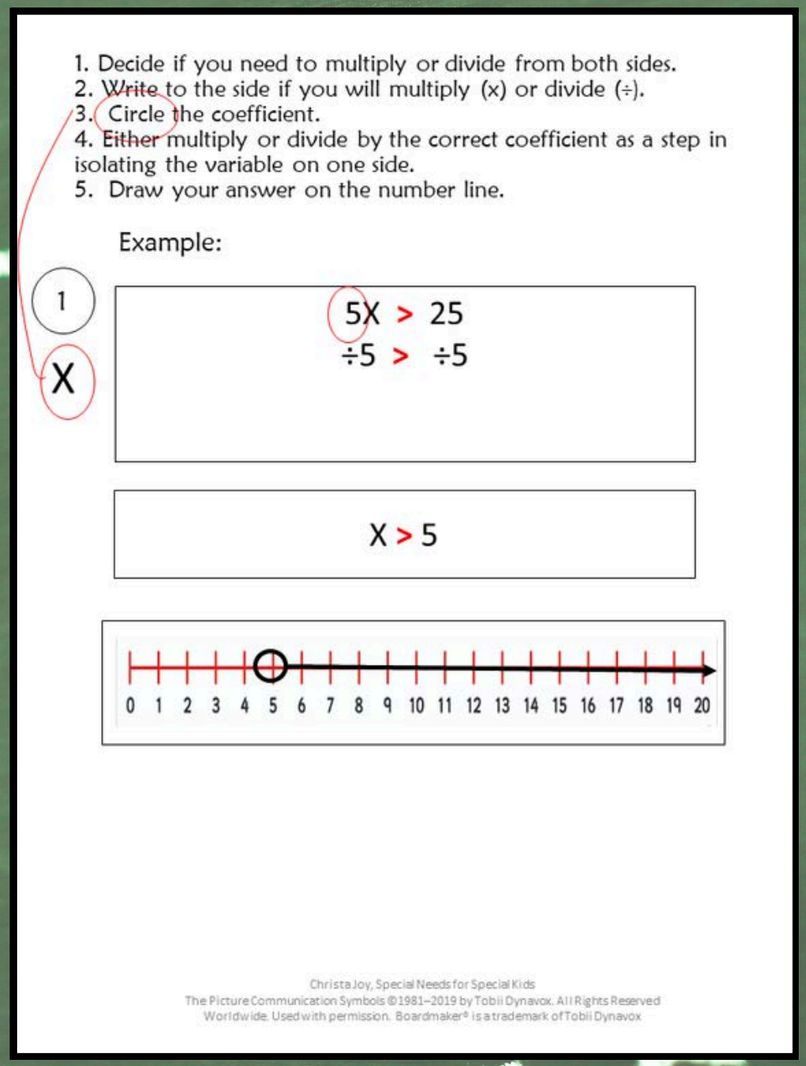
1

X

5X > 25

÷5 > ÷5

X > 5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Example:

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X > 5

Uses the COSMIC system

Worksheets focus on one step at a time and build up to solving the inequality from start to finish.

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Advanced Linear Functions

Plot the following inputs and outputs from the function table onto the graph, and answer the questions.

INPUT (X)	Output (Y)
4	4
6	5
8	6
10	7

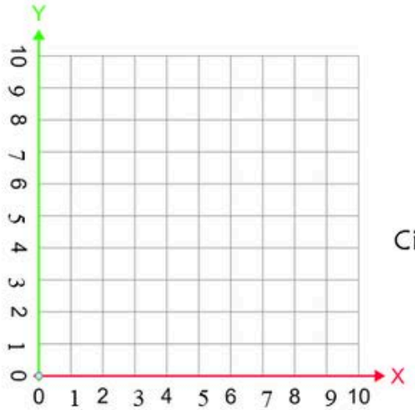
Write the order pairs:

(,)

(,)

(,)

(,)



Circle the relationship:

positive 

negative 

none 

12

In each problem identify the slope in the slope intercept form (y= mx+b). You can color it in or circle the right answer.

1. Y = x + 7

1	y	7	x

2. Y = 6x + 5

y	5	6	b

3. Y = 8x + 8

x	8	y	0

4. Y = x + 1

y	0	p	1

5. Y = 2x + 4

4	y	x	2

The advanced unit:

- Interpreting function graphs
- Graphing data from a function table
- Simple calculations of slope
- Identifying x and y intercepts
- Predicting and graphing correlations from a function table

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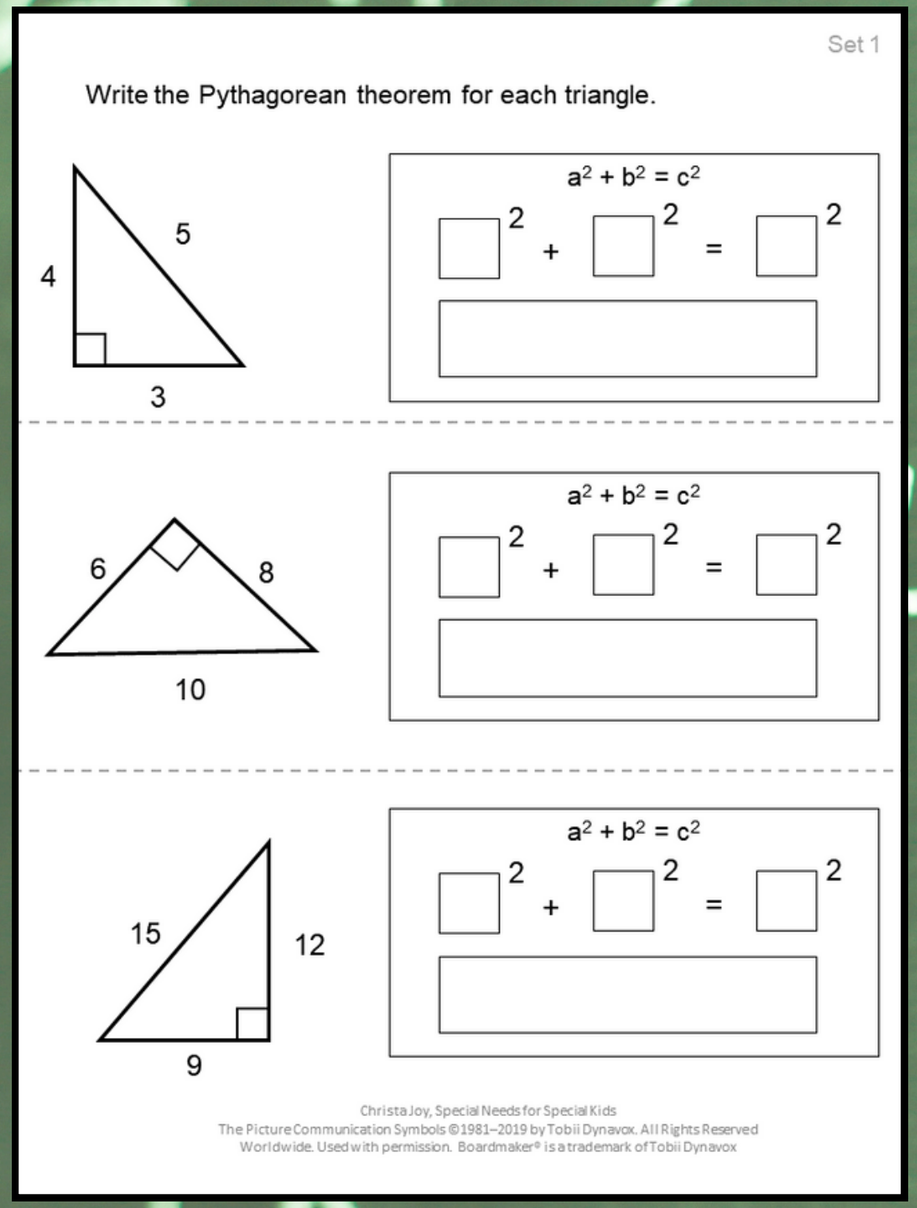
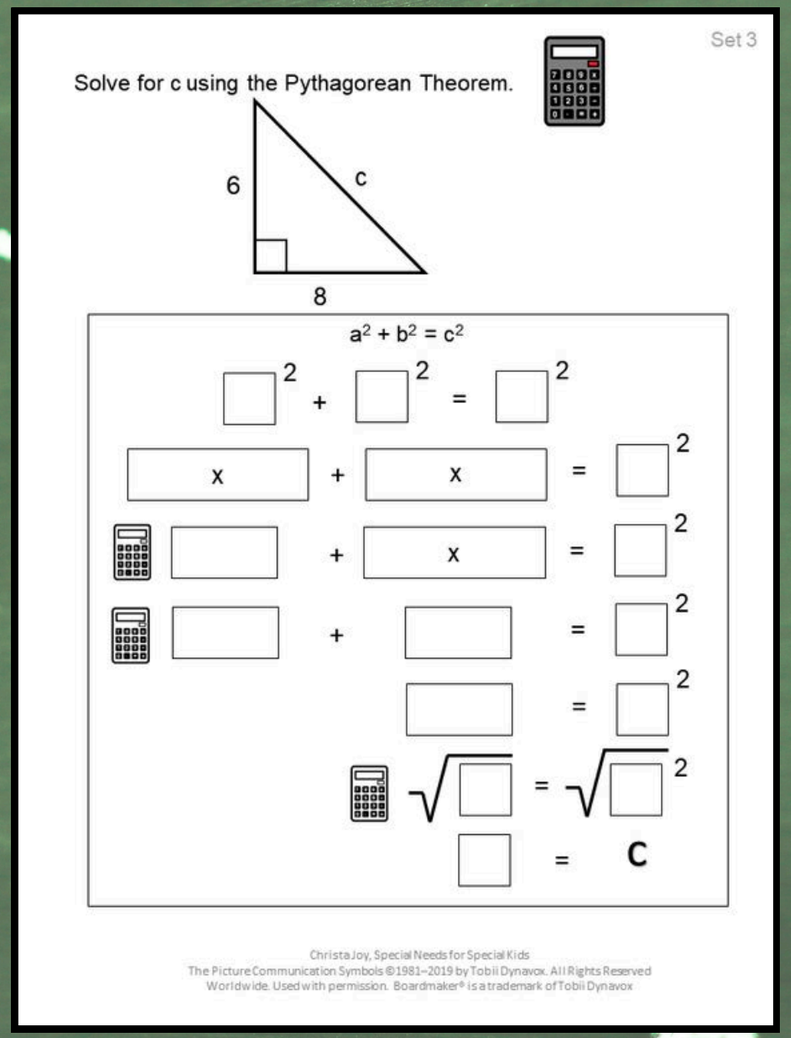
Pythagorean Theorem





This unit covers:

- Right triangles
- Labeling triangles
- Filling out Pythagorean theorem
- Scaffolded activities will lead to solving for c

Quadratic Equation

Rewrite the quadratic equation using the value of a, b, and c given

1. a= 2 b= 3 c= 4

$ax^2 + bx + c = 0$

___ x^2 + ___x + ___ = 0

2. a= 5 b= 7 c= 2

$ax^2 + bx + c = 0$

___ x^2 + ___x + ___ = 0

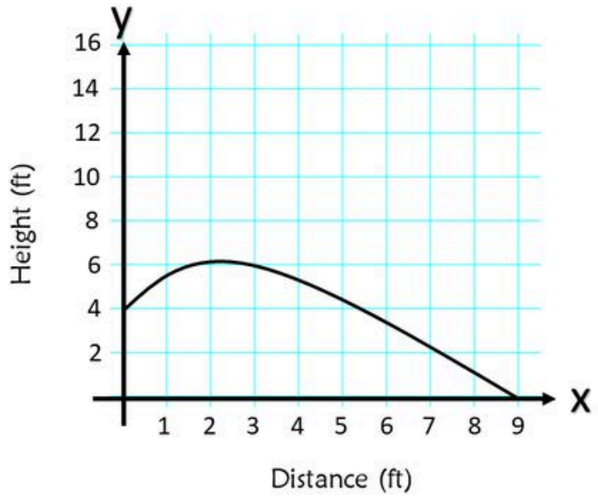
3. a= 1 b= 9 c= 10

$ax^2 + bx + c = 0$

___ x^2 + ___x + ___ = 0

3

Jill threw a paper airplane. When she lets it go, it is 4 feet off the ground. Look at the graph below and answer the questions about how the plane traveled.



1. How far did the plane go before it hit the ground?

ft

2. How high did it go?

ft

3. What is the coordinates of vertex? x , y

This unit covers:

- Reading quadratic equations
- Label variables in the equation
- Does not teach HOW to solve the equation
- Real-world examples

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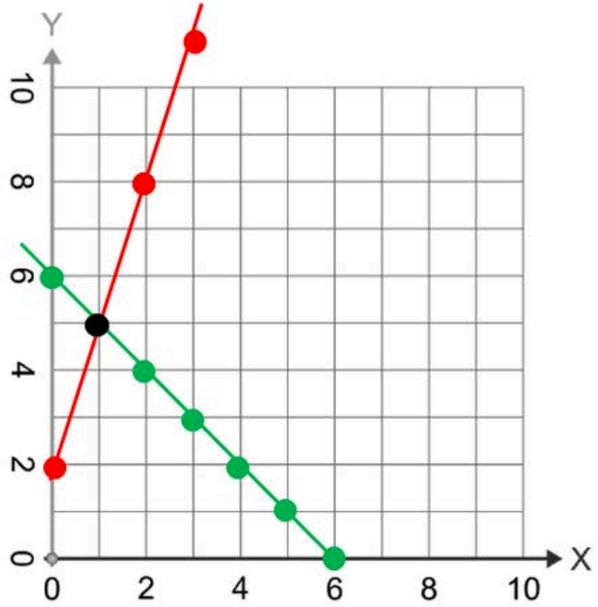
Intro to Systems

Find where the two lines intersect, and write the ordered pair and the values of X and Y which is the solution to the following system.

X+Y=6

-3X+Y=2

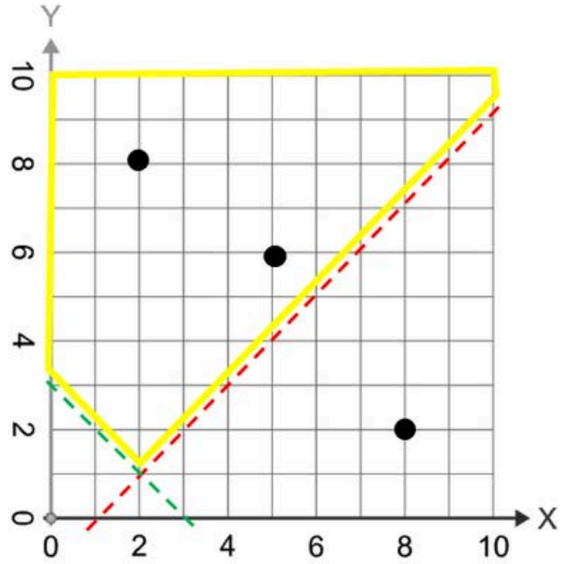
Answer: __,__
X = __
Y = __



1. Circle each inequality sign.
2. Shade in where the 2 inequalities overlap.
3. Circle any points that would be possible values for X and Y.

X+Y > 3

X-Y < 1



This unit covers:

- What is a system?
- How to identify the variables

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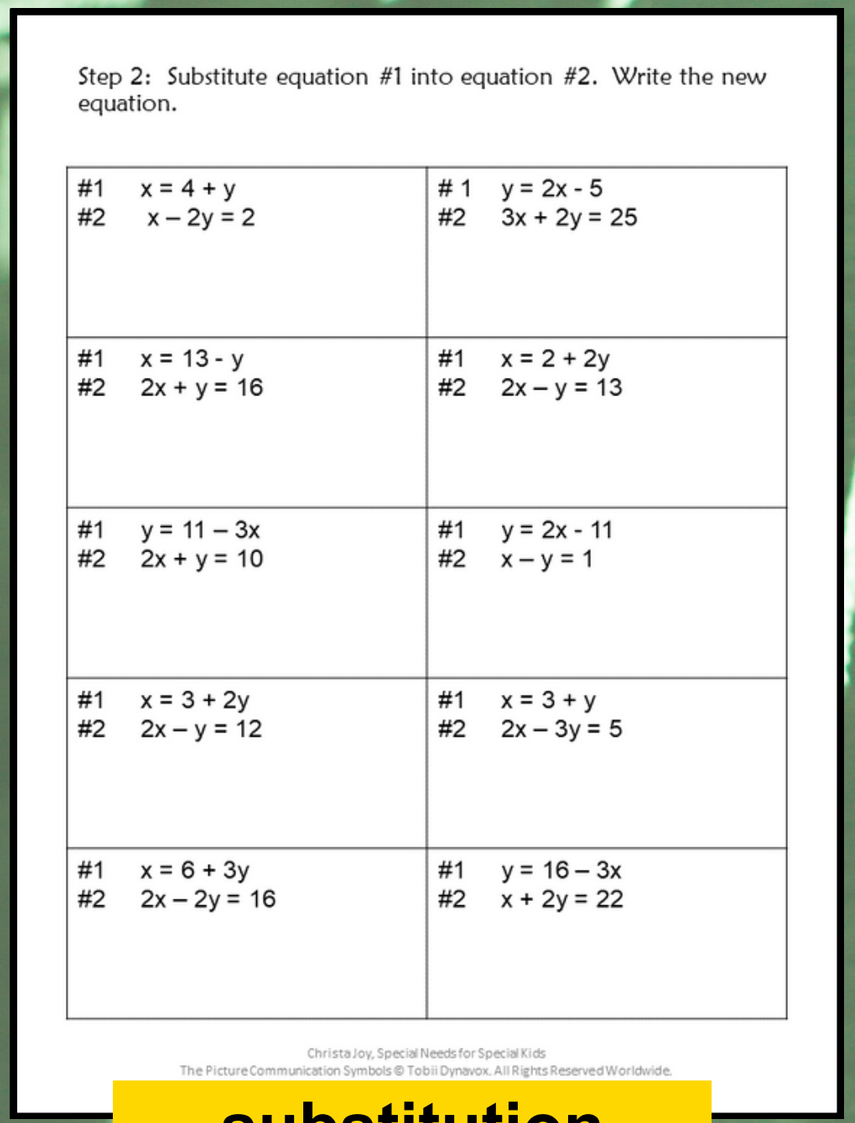
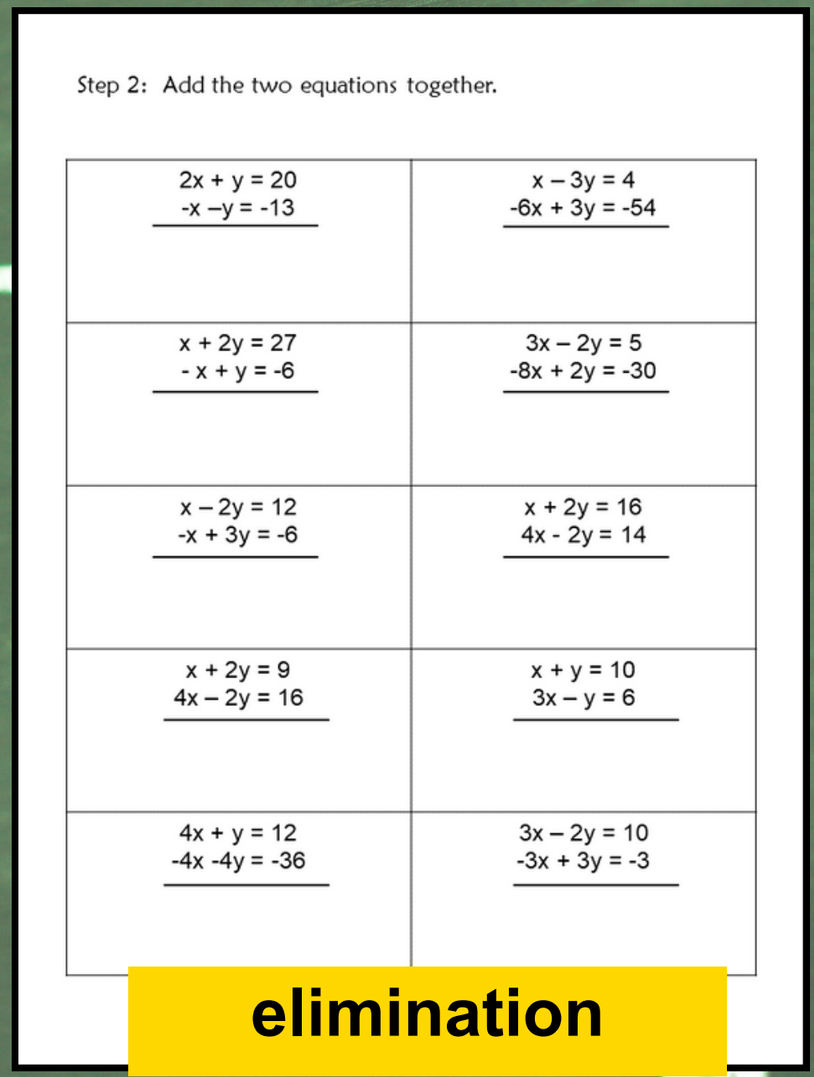
Solve Systems of Equations



Step 2: Substitute equation #1 into equation #2. Write the new equation.

#1 x = 4 + y #2 x – 2y = 2	# 1 y = 2x - 5 #2 3x + 2y = 25
#1 x = 13 - y #2 2x + y = 16	#1 x = 2 + 2y #2 2x – y = 13
#1 y = 11 – 3x #2 2x + y = 10	#1 y = 2x - 11 #2 x – y = 1
#1 x = 3 + 2y #2 2x – y = 12	#1 x = 3 + y #2 2x – 3y = 5
#1 x = 6 + 3y #2 2x – 2y = 16	#1 y = 16 – 3x #2 x + 2y = 22

substitution



Step 2: Add the two equations together.

2x + y = 20 -x –y = -13	x – 3y = 4 -6x + 3y = -54
x + 2y = 27 - x + y = -6	3x – 2y = 5 -8x + 2y = -30
x – 2y = 12 -x + 3y = -6	x + 2y = 16 4x - 2y = 14
x + 2y = 9 4x – 2y = 16	x + y = 10 3x – y = 6
4x + y = 12 -4x -4y = -36	3x – 2y = 10 -3x + 3y = -3

elimination

This unit covers the steps to solving systems of equations using:

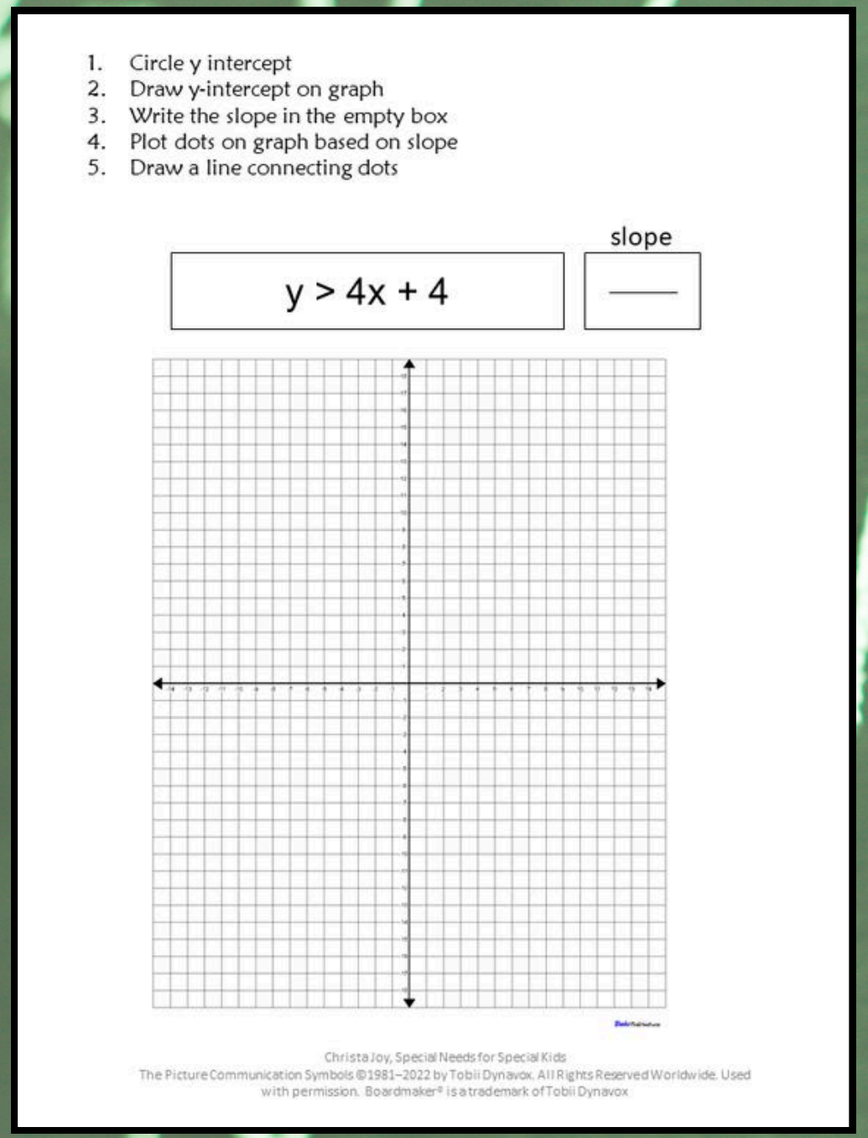
- substitution
- elimination

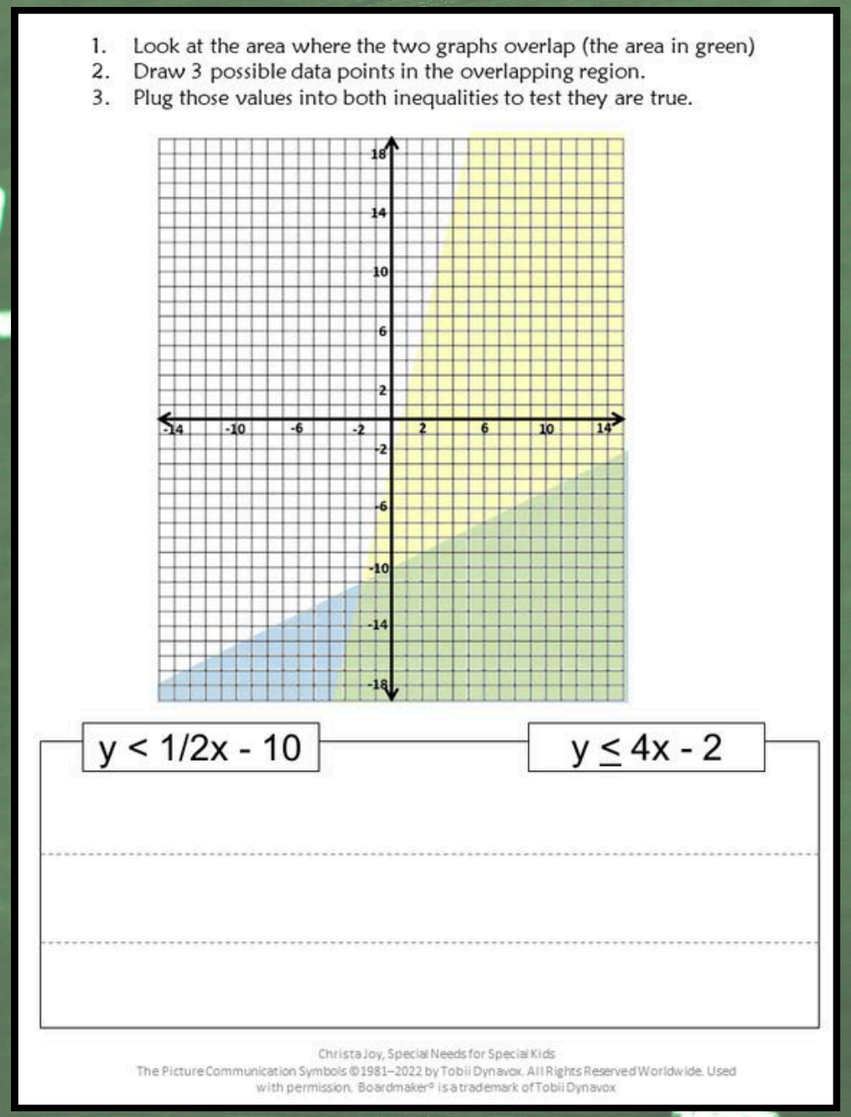
Lots of practice worksheets focusing on one step at a time.

Solve Systems of Inequalities

This unit covers the steps to solving systems of inequalities.

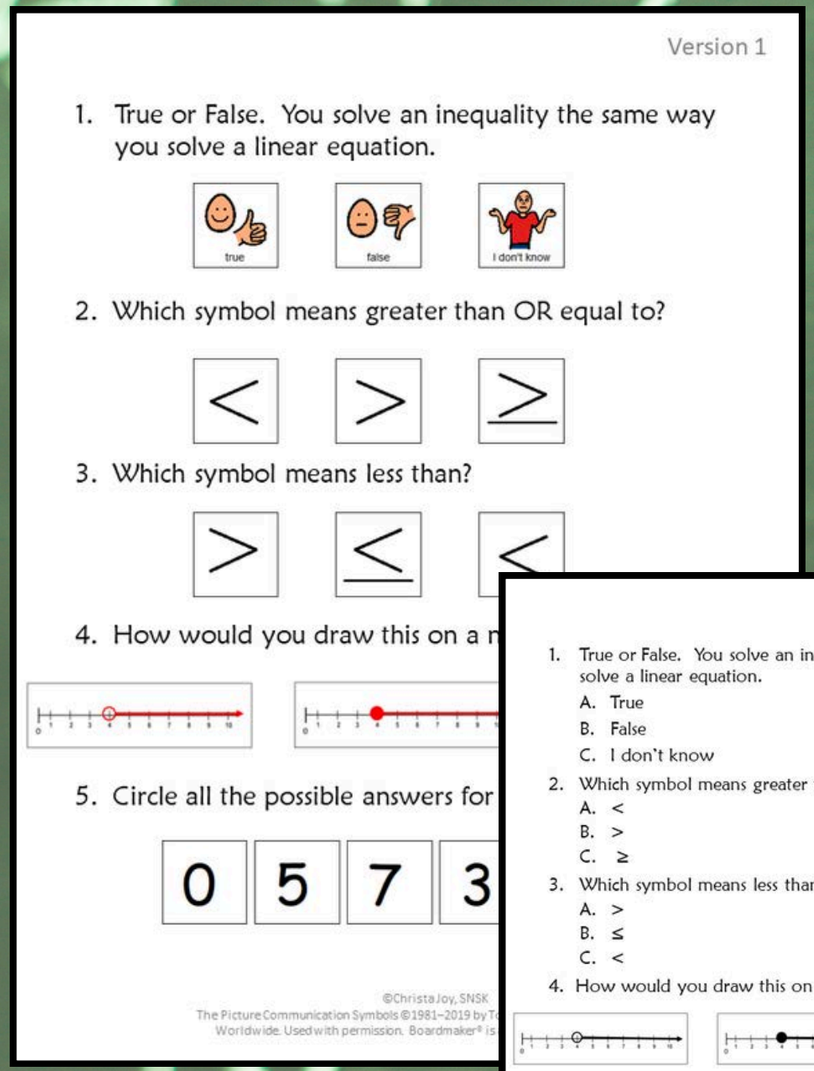
Lots of practice worksheets focusing on one step at a time.





Assessment

Some of the units have an assessment that reviews the main concepts and has some practice problems.


Version 1

1. True or False. You solve an inequality the same way you solve a linear equation.

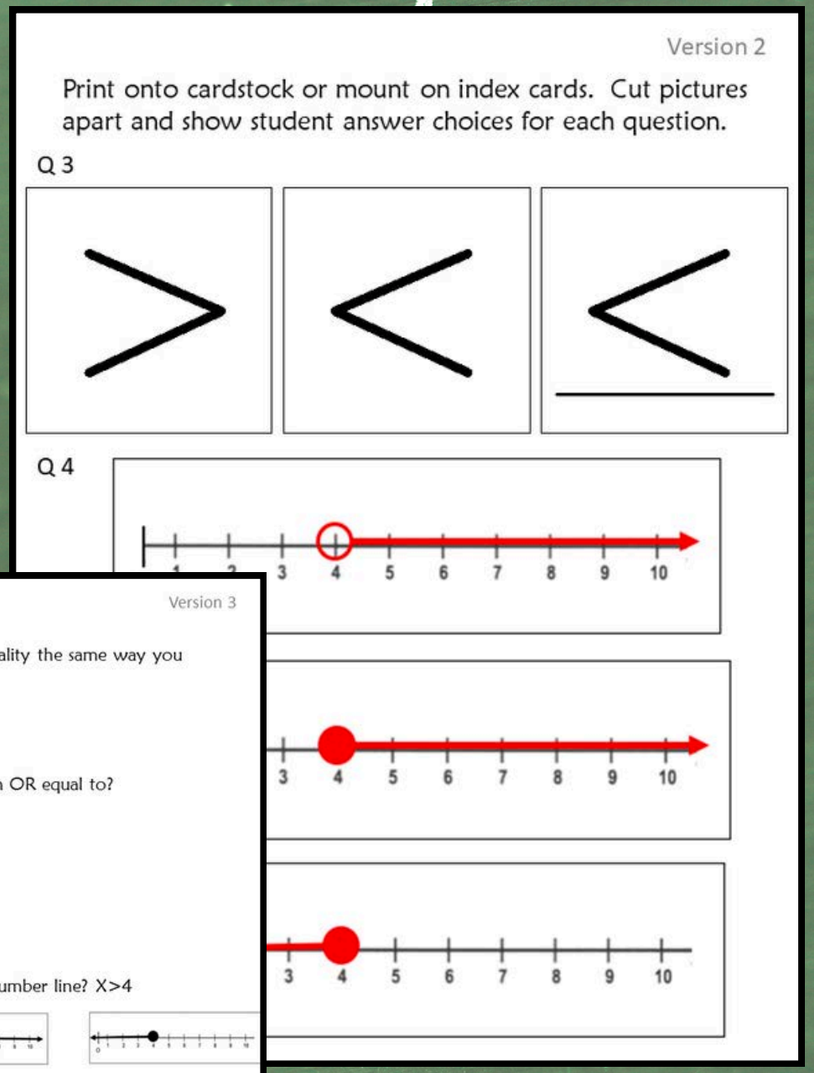
2. Which symbol means greater than OR equal to?

3. Which symbol means less than?

4. How would you draw this on a n

5. Circle all the possible answers for

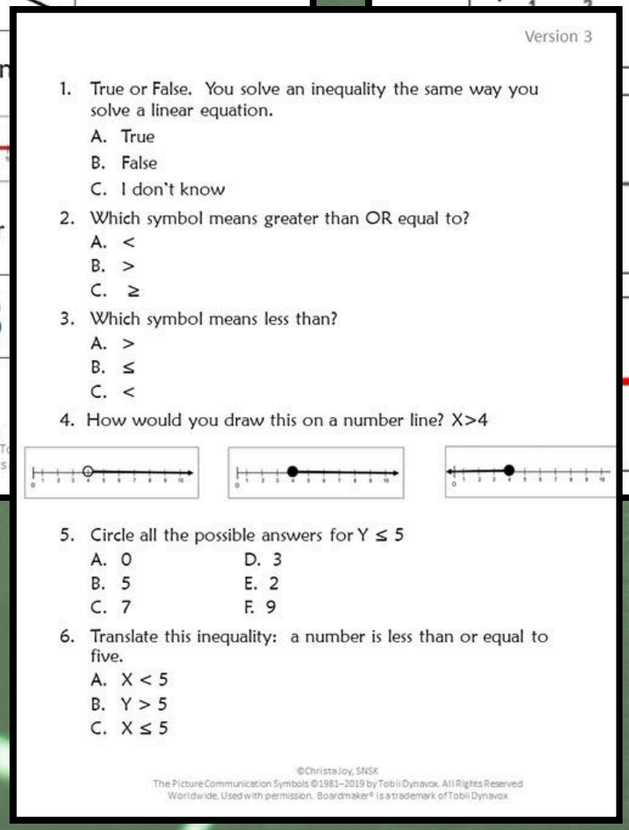
0 5 7 3


Version 2

Print onto cardstock or mount on index cards. Cut pictures apart and show student answer choices for each question.

Q 3

Q 4


Version 3

1. True or False. You solve an inequality the same way you solve a linear equation.
   A. True
   B. False
   C. I don't know
2. Which symbol means greater than OR equal to?
   A. <
   B. >
   C. ≥
3. Which symbol means less than?
   A. >
   B. ≤
   C. <
4. How would you draw this on a number line? X>4

5. Circle all the possible answers for Y ≤ 5
   A. 0 D. 3
   B. 5 E. 2
   C. 7 F. 9
6. Translate this inequality: a number is less than or equal to five.
   A. X < 5
   B. Y > 5
   C. X ≤ 5

All of these units include digital versions of the activities.

There is a movie version of the book.

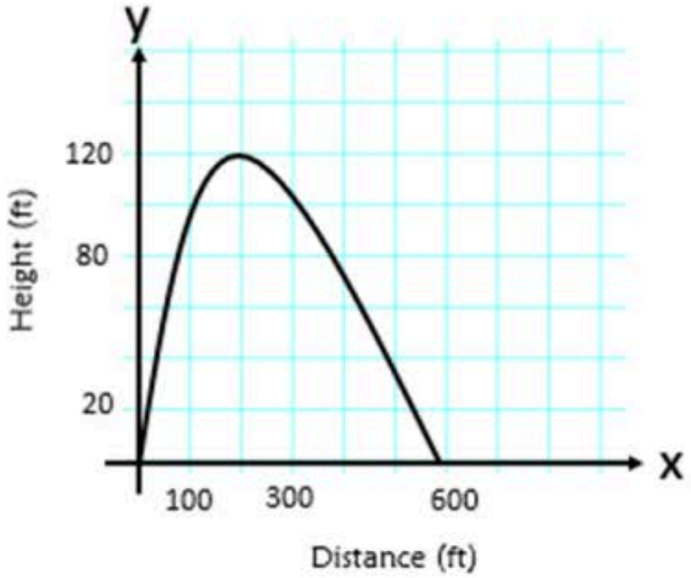
There are 2 complete sets of slides, one of which is differentiated by color. In the differentiated set of slides, no typing is required.

Make great independent learning centers.

Listen to the book read aloud

The movie version of the book from each unit.

Great for review



Tiger hit the golf ball down the fairway. Look at the graph below and answer the questions about how the golf ball traveled.

Fill in the boxes with the correct answers.

1. How far did the golf ball go before it hit the ground?

ft

2. How high did it go?

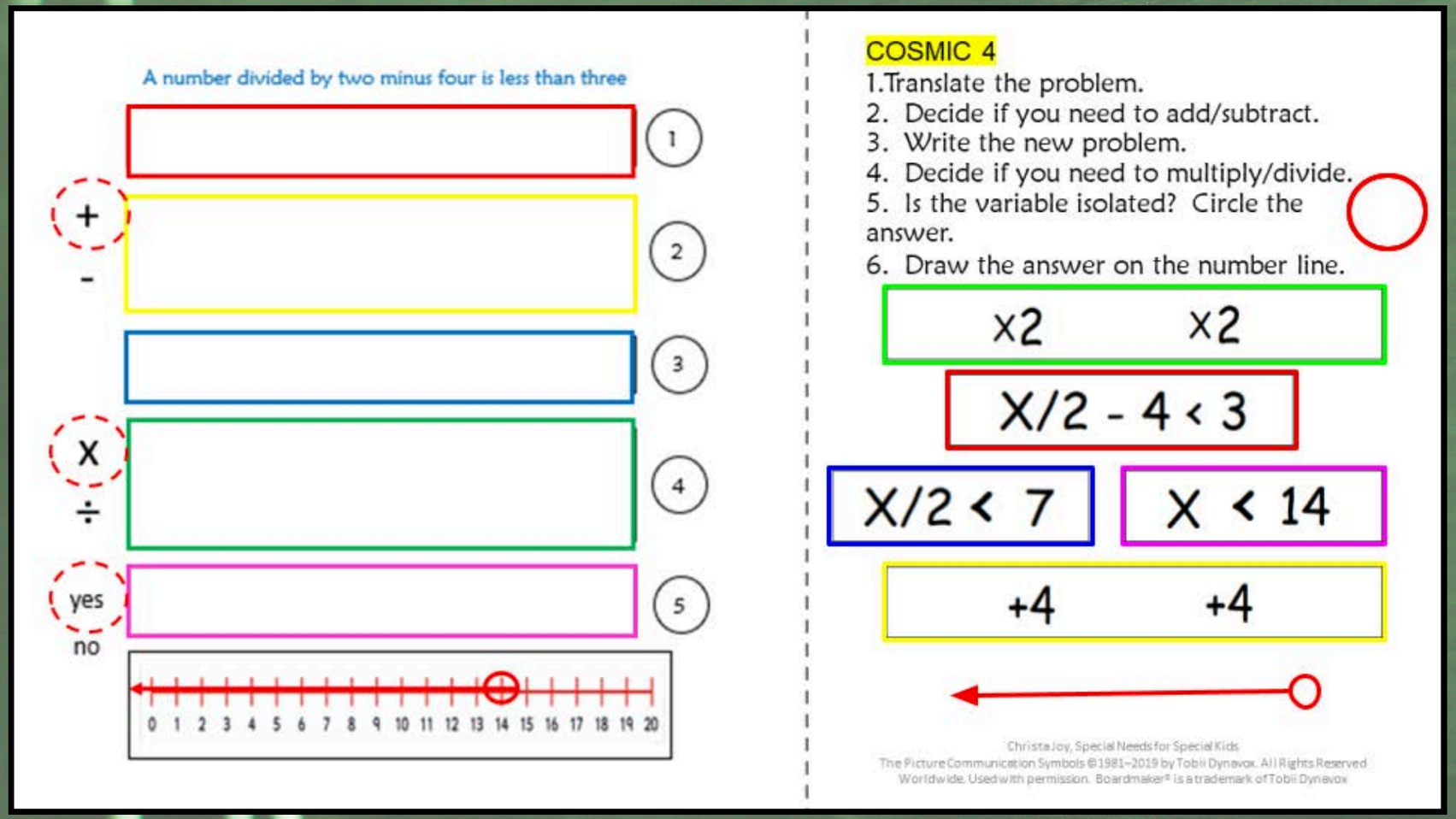
ft

3. What is the coordinates of vertex? x , y

The digital activities in this set do require some typing.

J2T

Perfect for any learning level



The second set of slides is differentiated with more visual support.

Still have questions?

Reach out at specialneedsforspecialkids@gmail.com

I will answer your question personally and promptly.